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**SECOND TRIMESTER MEDICAL ABORTION - PERCEPTIONS AND EXPERIENCES**

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SECOND TRIMESTER MEDICAL ABORTION - perceptions and experiences

## THESIS FOR DOCTORAL DEGREE (Ph.D.)

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In memory of Margareta Hammarström



# ABSTRACT

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## Introduction

Second-trimester abortions account for 10 - 15 % of all induced abortions worldwide with a wide variation of permits in different countries. In Sweden, second-trimester abortions account for less than 10 % of the total number of induced abortions. The indication can be fetal or socioeconomic. The medical abortion regimen with mifepristone and misoprostol, is the regimen used in Sweden. The treatment with misoprostol often causes painful contractions, and prophylactic as well as additional pain treatments are needed. The median interval from induction with the first dose of misoprostol to expulsion is 5 to 6 hours. A nurse/midwife takes care of the woman during an uncomplicated second-trimester abortion procedure. The aim of this thesis was to improve the care of women undergoing second-trimester medical abortion by increasing the knowledge about women's feelings, thoughts and experiences and nurses/midwives' experiences of second-trimester abortion care.

## Methods and findings

**Study I** was a qualitative study; 21 interviews with nurses/midwives were analyzed using content analysis. Taking care of women undergoing second-trimester medical abortion was perceived as a task that requires professional knowledge, empathy and the ability to reflect on ethical attitudes and considerations. The feeling of supporting women's rights bridged the difficulties nurses/midwives faced in caring for women undergoing second-trimester medical abortion.

**Study II** was cross-sectional. 31 women answered a questionnaire prior the abortion about their expectations and feelings and 23 of them were interviewed after the abortion. The women expressed similar emotions prior the abortion, largely irrespective of the indication to the abortion. Despite strong, conflicting emotions and physical difficult experiences women did not regret their decision to have the abortion. Their rational thinking outweighed their emotional hard feelings.

**Study III** was a mixed-method study with focus on women's thoughts and feelings related to the fetus and to viewing the fetus or not. Fifteen of the women from study II were telephone interviewed 6 to 10 months later. Several women expressed thoughts about the fetus prior the abortion. Most women with socioeconomic indication to the abortion no longer expressed any thoughts about the fetus, while women with fetal indication still expressed feelings of sadness over a lost child. Women who had unintentionally or intentionally viewed the fetus did not experience any negative feeling during the telephone interview.

**Study IV** was a randomized controlled trial with 52 women randomized to a paracervical blockade, PCB, with bupivacaine, and 50 women randomized to a PCB with sodium chloride, administered one hour after the first dose of misoprostol. The primary outcome variable, highest pain intensity did not show any differences between the two groups. On a visual analogue scale, VAS from 0 to 10, 65 - 75 % of the participants reported pain as  $VAS \geq 7$ . There were no differences in morphine consumption between the groups, or in induction-to-abortion interval. The most common side effects were nausea and vomiting in connection to morphine injection, with no differences between the two groups.

## **Conclusions**

Undergoing second-trimester abortion is a vulnerable and emotionally difficult situation for many women irrespective of the indication for the abortion. They have to be treated with respect, professional knowledge and empathy. Structured work-based training for health care personnel can increase the possibility to offer optimal care for women undergoing second-trimester abortion.

A caring encounter with informing guidance from the nurse/midwife and possibility for the women to express concerns and issues is crucial in second-trimester care. To actively ask women prior to the abortion about their emotions, thoughts, feelings and even about the fetus seems to help them to be mentally prepared for what will happen during and after second-trimester abortion. Women should have the chance to choose if they want to view the fetus, irrespective of the indication to the abortion.

Second-trimester abortion related pain is a complex experience often with high intensity physical pain. Prophylactic PCB does not statistically significantly reduce maximal pain scores and the need for additional opiates during second-trimester medical abortion.

**Key words:** Second-trimester abortion, medical termination of pregnancy, MTOP, mifepristone, misoprostol, experiences, perceptions, thoughts, feelings, caring, nursing, pain, paracervical block, fetus, ethical reflection



# LIST OF SCIENTIFIC PAPERS

- I. **Andersson I-M**, Gemzell-Danielsson K, & Christensson K.  
Caring for women undergoing second-trimester medical termination of pregnancy.  
*Contraception* 2014(89):460-465
- II. **Andersson I-M**, Christensson K, Gemzell-Danielsson K.  
Experiences, feelings and thoughts of women undergoing second trimester medical termination of pregnancy.  
*PloS ONE* 2014;9(12): e115957. doi:10.1371/journal.pone.0115957
- III. **Andersson I-M**, Christensson K, Gemzell-Danielsson K.  
Perceptions of the fetus among women undergoing second-trimester medical termination of pregnancy.  
*In manuscript*
- IV. **Andersson I-M**, Benson L, Christensson K, Gemzell-Danielsson K.  
Paracervical block as pain treatment during second-trimester medical termination of pregnancy - a RCT with bupivacaine versus sodium chloride.  
*Accepted for Human Reproduction*

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## LIST OF ABBREVIATIONS

CI	Confidence interval
D&C	Dilatation and Curettage
D&E	Dilatation and Evacuation
EDA	Epidural anesthesia
GEE	Generalized Estimating Equation
ICM	International Confederation of Midwives
ICN	International Council of Nurses
MToP	Medical Termination of Pregnancy
NSAID	Non-Steroidal Anti-Inflammatory Drug
PCB	Para cervical blockade
RCT	Randomized Control Trial
RR	Relative risk
SPSS	Statistical Package for the Social Sciences
UK	United Kingdom
VAS	Visual Analogue Scale
WHO	World Health Organization

# 1 INTRODUCTION

## 1.1 INDUCED ABORTION

### 1.1.1 Historical perspective

Induced abortion is a worldwide phenomenon that has been performed in all cultures for centuries – indeed for thousands of years. We know from old writings from the 13th century that induced abortion was illegal in Sweden (Västgötalagen), and if anyone defied the law she was penalized with hard penalties. Infanticide and induced abortion were considered to be equal. Unmarried women delivered their children in secret and killed the newborn baby. The law from 1734 proclaimed that a woman having an induced abortion as well as the person who assisted her should be penalized with the death penalty (Ericsson 2006).

Knowledge about herbs and their medical fields of application has been used since ancient times. Juniperus Sabina and ergot (Figure 1) were common herbs that were used for induced abortion. In the late 19<sup>th</sup> century chemical methods arose such as swallowing phosphorus from matches, and more or less serious abortionists developed mechanical methods (Lennerhed 2008).

Approximately 10 000 – 20 000 women went through illegal abortions annually in the first decades of the 1900s and many of them received severe infections or even worse: they did not survive (Högberg 1983).



Figure 1. Herbs used for induced abortion

The first abortion law in Sweden came into effect in 1938 and allowed induced abortion for strictly medical-social, humanitarian or eugenic reasons. In line with changes in society to more liberal attitudes to sexuality and also to induced abortion, the law changed a couple of times. In 1963 fetal malformation was added to the reasons for permitting an abortion, due to “the neuroseddyne-catastrophe”. The abortion law introduced 1975 still applies and allows induced abortion on the woman’s request up to 18 weeks gestation (SFS 1974:595). Around 30000 to 38000 abortions occur each year since the liberation of the abortion law in 1975. Most abortions are performed before 12 weeks gestation and second-trimester abortions are around 10 % of the total numbers (Figure 2) of induced abortions in Sweden (Socialstyrelsen 2014).

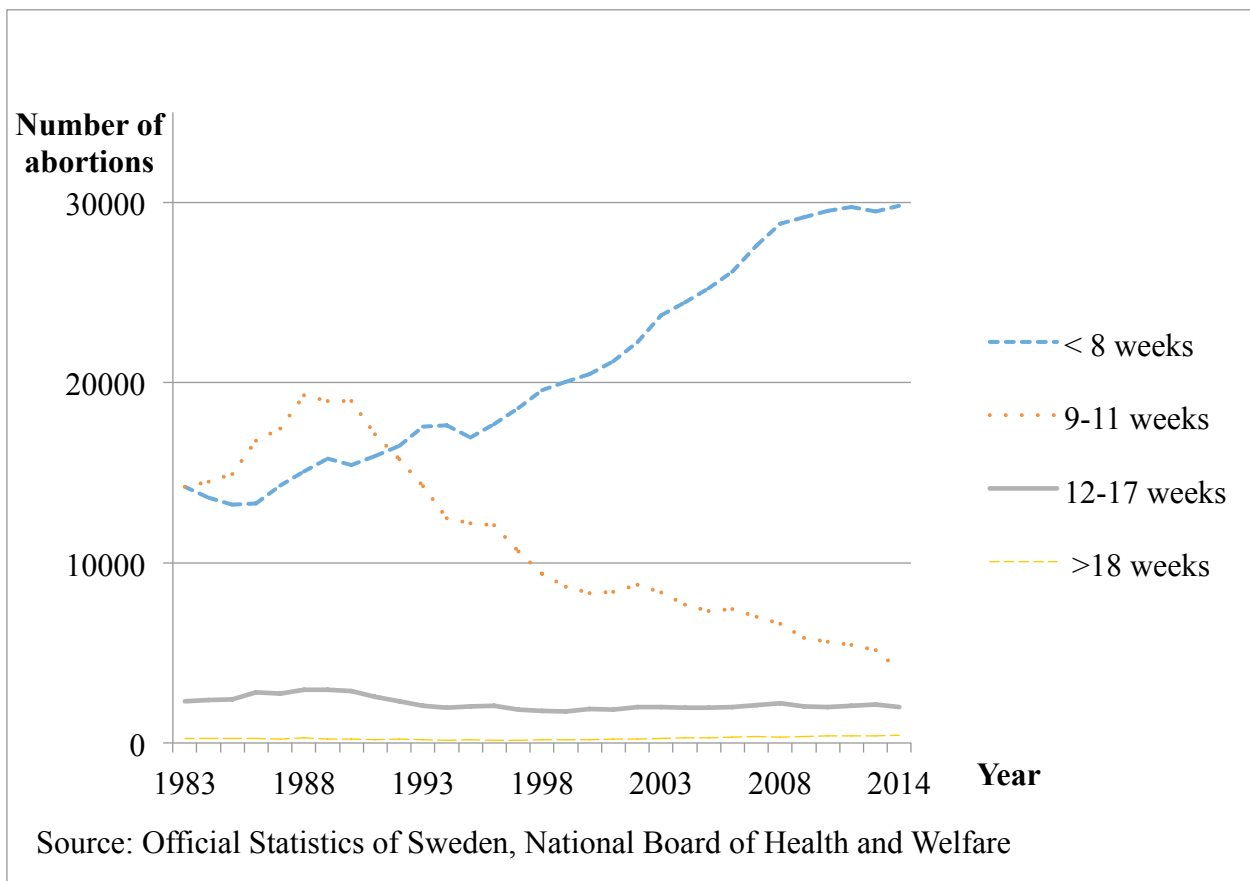


Figure 2. Induced abortions due to gestational length, from 1983 to 2014 in Sweden.

### 1.1.2 Global perspective

Approximately 210 million women become pregnant each year around the world, and of those 42 million women go through an abortion. Abortion laws and access to abortion differ between countries worldwide, from viewing abortion as a criminal act to availability on broad requests (Levels et al 2014). Almost half of the abortions are unsafe abortions (Figure 3) carried out under conditions lacking medical knowledge and/or routines (Bury et al 2012, Sedgh et al 2012). This occurs mainly in low- and middle-income countries but also in Eastern Europe. Second-trimester abortions are approximately 10 - 15 % of all induced abortions worldwide with a wide variety of permits in different countries (Boland 2010).

A growing movement for women's rights has, by telemedicine and medical treatment, made safe early abortion available for women living in countries with restrictive abortion laws (Gomperts et al 2008).

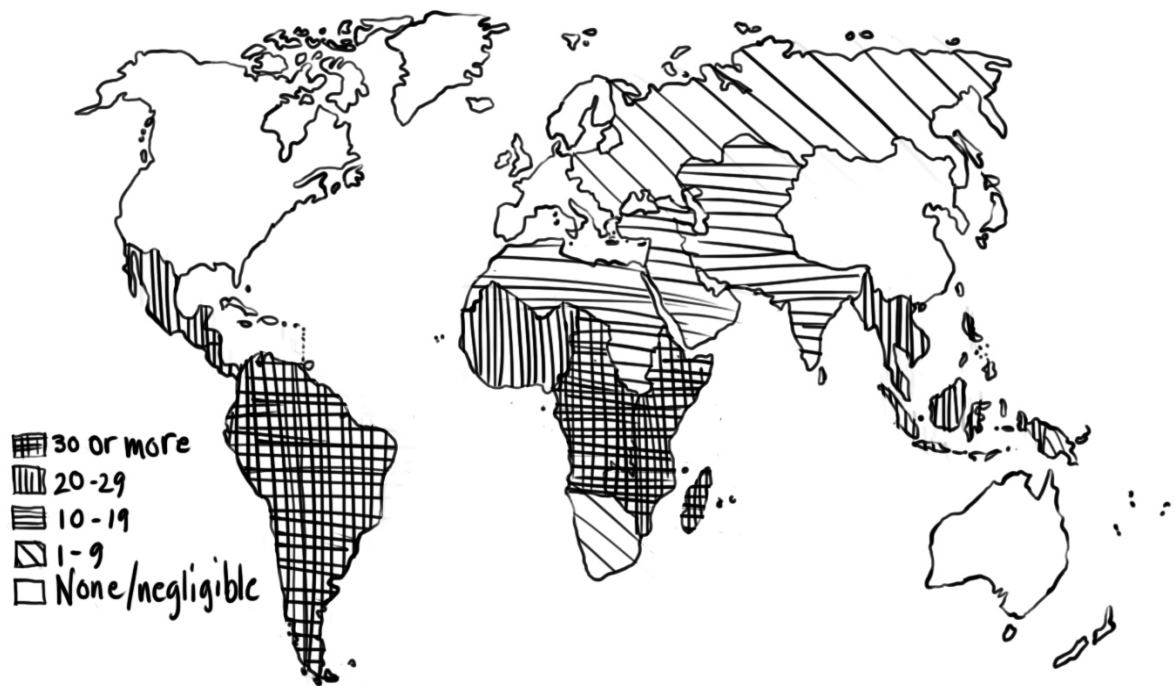
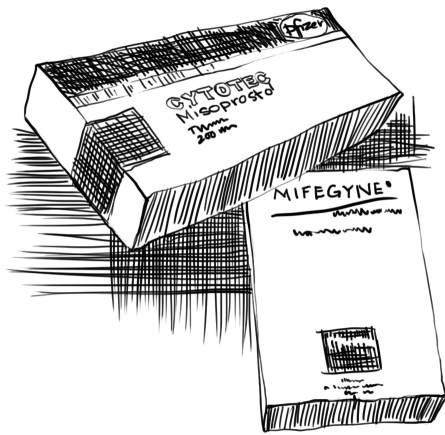


Figure 3. Unsafe annual abortions per 1000 women aged 15-44 years  
(Source: WHO Unsafe abortion 2008)

### 1.1.3 Abortion methods

Surgical methods have been used for induced abortion since the sharp curette was invented in the 19<sup>th</sup> century, and today is vacuum aspiration the most common surgical procedure in many countries worldwide. Due to the high risk for complications the WHO has recommended that sharp curettage (D&C) should not be used (WHO 2012). Vacuum aspiration, manual or electric, can be used for early abortions (Dean et al 2015) while dilatation and evacuation (D&E) is the standard method for surgical second-trimester abortion. Outdated methods such as intra- or extra amniotic instillation of abortive fluids are still used in some places. During surgical abortion general anesthesia, local anesthetics or opioids are used for pain treatment.

In the 1980s the combined regimen of mifepristone and a prostaglandin analogue was first described in Sweden (Bygdeman & Swahn 1985) and approved in France in 1988 up to 42 days (Peyron et al 1993), and 1991 in the UK and 1992 in Sweden up to 63 days of gestation. It was followed a few years later, in 1994, by approval also in the second-trimester in Sweden (Gemzell & Lalikumar 2008).



The recommended and approved regimen for medical abortion is 200 mg mifepristone taken orally followed 24 to 48 hours later by misoprostol administered vaginally and/or sublingually (Figure 4). With increasing gestational length additional repeat doses of 400 µg misoprostol are given. The drugs induce cervical ripening and uterine contractions leading to expulsion of the pregnancy, a process similar to a miscarriage. The contractions and expulsion may be painful and pain treatment should be offered.

Figure 4. Drugs used for medical abortion

## 1.2 ABORTION AFTER THE 13 GESTATIONAL WEEK

### 1.2.1 Indications for abortion

There are many individual reasons for delaying abortion to the second-trimester such as ambivalence, not realizing being pregnant, fear of relatives' reactions or changed/broken down relationship with the partner (Ingham et al 2008). More strictly, indications for second-trimester abortion are either socioeconomic (Lee et al 2010) or fetal. Fetal indication can be a genetic disorder or malformation, detected by a routine ultrasound examination or fetal diagnostic test by amniocentesis or chorion villus biopsy (Benute et al 2012, Asplin et al 2013).

### 1.2.2 Legal requirements

Abortion after 18 gestational weeks in Sweden requires permission from The National Board of Health and Welfare (SFS 1974:595). The granting board consists of lawyers, psychiatrists, gynecologists, counselors and laypersons, and it meets once a week. Approximately 80 % of the applications are granted. One percent (n=405) of the total number of abortions in Sweden were permitted and performed after the 18<sup>th</sup> gestational week in 2012. The upper limit to be granted permission is not fixed in gestational weeks or days but defined as "viability".

Therefore if the fetus can be expected to be viable after expulsion, permission for abortion cannot be given on any indications. To adjust to the medical achievements in neonatology the upper gestational limit has successively been reduced since 1975 and is currently 21 weeks and 6 days. Importantly termination of pregnancy to save the woman's life does not fall within the abortion law.



### **1.2.3 Clinical practice and care**

Depending on the indication, a midwife and a clinician at an outpatient family planning clinic, or at a clinic for prenatal diagnosis and ultrasound, usually gives the information first about the abortion. It may take a few days from this initial contact, until the abortion is induced. All women requesting abortion in Sweden are offered contact with a counselor but this contact is not compulsory.

The medical abortion regimen with mifepristone and misoprostol, recommended by WHO, is the regimen used in Sweden for second-trimester abortion (Gemzell & Lalikumar 2008). The intake of the mifepristone tablet occurs under the supervision of a nurse/midwife during a polyclinic visit. Further information about the procedure and care is also given during this visit, including information about pain treatment. The woman is given the opportunity to ask questions related to the abortion to be prepared for the abortion process.

Two days later (36-48 hours interval) the woman returns for administration of misoprostol. The initial dose is usually administered vaginally and is followed by repeat doses (usually oral) every third hour until expulsion occurs. During this process prophylactic pain treatment with paracetamol and a NSAID is given, as well as additional pain treatment when and as needed with oral or intravenous opioids and/or local anesthetics. The median interval from induction with the first dose of misoprostol to expulsion is 5 to 6 hours (Hamoda et al 2005). A nurse/midwife takes care of the woman during an uncomplicated abortion procedure. The woman remains in the hospital and can choose to have a partner, relative or a friend accompanying her during the abortion process.

## **1.3 THE FETUS**

### **1.3.1 Developmental stages**

The fetal development starts with the fusion of the egg and the sperm during the first three weeks from conjugation. During this time the fertilized egg will find its way via the fallopian tube to the uterus where it will implant. During these first ten weeks the fetal development takes place. Brain- and heart predispositions are constructed early on but without higher functions being established, followed by development of internal organs, muscles, and skeleton. From the 11<sup>th</sup> gestational week growth of the fetus is the main function together with the maturity process. The lungs and the brain are the last fetal organ systems to be mature for life outside the uterus (Lendal & Marsal 2009).

### **1.3.2 Conscious and awareness**

In utero the fetus is mostly in a condition of unconsciousness due to sedation by low oxygen tension of fetal blood and sleep-inducing prostaglandin from the placenta. The pathways and connections from peripheral nerves to the cortex are not fully established even if the fetus can

show reactions to touch and sounds from external stimuli. These reactions are probably reflexes with no awareness of the body or the environment (Lagercrantz & Changeux 2009). The neurological possibility for pain signals to reach the brain is not fully developed until after 22 gestational weeks and finally matures after delivery when it is possible to feel pain (Derbyshire 2006).

### **1.3.3 Viability**

During the last decades more interventions have been developed for extremely premature infants. Actively life-sustaining managements with prenatal steroidal treatment for lung maturity when possible, in order to save the lives of extremely pre-term born infants, have increased. Despite these interventions, no reduction in mortality for infants born prior the 22<sup>nd</sup> gestational week has been seen, and the death is just prolonged but not prevented in cases with infants born at gestational week 22 to 24 (Donohue et al 2009).

## **1.4 WOMEN'S EXPERIENCES**

### **1.4.1 Experiences and perceptions**

There are several studies on women's experiences of undergoing abortion, mainly from early abortion or abortion in general. The findings describe the abortion as a positive or neutral experience (Teal et al 2009), women's physical and emotional aspects of the abortion (Slade et al 2001) and their ethical reasoning on the possibility to choose between parenthood and abortion (Halldén et al 2008). Women's reasons to choose the abortion method (Lowenstein et al 2006) and acceptability of different abortion methods (Rodriguez et al 2012) have been studied. Experiences of an increased privacy and a sense of self-control by medical abortion are described, as well as fear of side effects (Gresh & Maharaj 2011).

Most women do not regret their decision to have an abortion and cope well even if they have contradictory feelings (Kero et al 2001, Wallin-Lundell et al 2013). Painful feelings such as anxiety and guilt can arise in connection to the abortion but emotional distress usually fades over time (Kero et al 2004). Several studies have shown that abortion has no negative impact on women's mental health (Charles et al 2008), and only a minority of women experience lasting sadness or regret according to risk factors such as ambivalence and low levels of support (Cameron 2010).

Studies of experiences from second-trimester abortion often focus on women or couples undergoing abortion for fetal indications (Benute et al 2012, Lafarge et al 2013). There are few studies on women's experiences of induced second-trimester abortion when the indication is socioeconomic. Reasons for requesting abortion in late gestational weeks have been studied to identify risk factors associated with late or delayed requests (Kiley et al 2010,

Swanson et al 2014). Second-trimester abortion can be a vulnerable process with the need of professional support (Mukkavaara et al 2012).

#### **1.4.2 Factors influencing the experience**

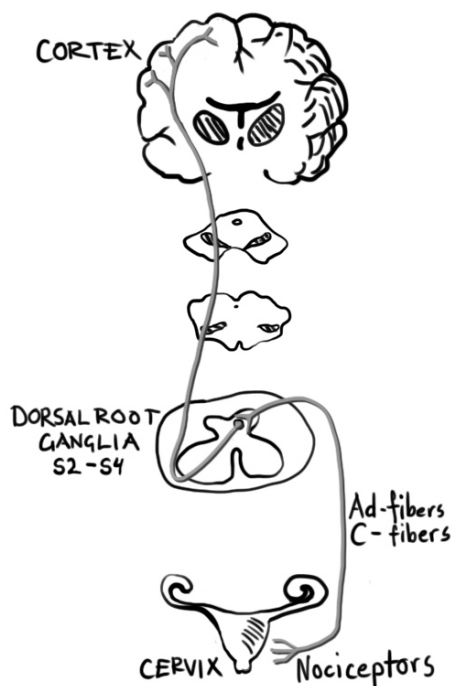
There are many factors that may influence women's expectations, thoughts and feelings related to abortion. Previous labor, miscarriage or abortion can have a positive or a negative impact on the woman's experience of the abortion depending on how the previous experience was. Women with no previous obstetric or gynecological experience to rely on may have expectations built on images from friends, relatives, the media or Internet. Fear and anxiety may increase negative expectations, especially with regard to the pain (Galak & Meyvis 2011).

Religious influence from the environment where the woman lives or has grown up, may have a deliberate or oblivious impact on her perceived situation. Views and regulations on abortion are not clearly expressed in the different religions but there are views on life and death that are interpreted and applied to abortion by proponents of the religions and communities of conviction. The issue of abortion based on Christianity has a restrictive position, especially among Evangelical Protestants, Catholics and Orthodox Christians, saying that abortion is ethically wrong. The discussions about abortion according to Christianity often focus on when a new human being can be counted as having a life that has to be protected. In other religions such as Islam, the question is about when the soul enters the fetus. The Sunni Islam statement is that ensoulment takes place on the 120<sup>th</sup> day (40-45 days from fertilization) and abortion can therefore be seen as legal at that stage of the pregnancy. In Shi'a Islam abortion is prohibited at any stage except to save the life of the pregnant woman. Hinduism and Sikhism talk about the life cycle; there is no absolute beginning or end of life and abortion is a negative process that interferes with this cycle. In Buddhism "being" is a combination of consciousness and the physical component determined by merits from past life (karma). Ending the life of the fetus can result in bad karma (Sorajjakool et al 2010). The religious influence together with cultural myths and repressive attitudes towards women in society can have an impact on the individual woman's experience of the abortion.

### **1.5 PAIN**

#### **1.5.1 Innervation and nociceptive pain**

Pain originated from peripheral tissues is led from the sore area via pathways through the dorsal horn and brain stem to the cerebral cortex where the pain is perceived. Stimuli impinging the receptors, nociceptors, in the peripheral tissue activate A-delta nerve



fibers and C-fibers (Figure 5). A-delta fibers mediate the distinct, sharp and clearly located pain with very fast speed (2.5-30 meters/second) to the brain, while the C-fibers slowly ( $< 2.5$  meters/second) activate a muffled and diffuse pain.

Nociceptive receptors located in viscera often cause diffuse pain perceptions that are hard to localize and are often accompanied by autonomous reactions such as nausea and sweating.

Pain from cervix uteri is supplied via nerves originating from the level of sacral nerves S2 to S4 in the segments of the spinal cord (Kumazawa 1986).

Figure 5. Schematic view of pathways for the perception of pain

### 1.5.2 Pain treatment mechanisms

The effects of different analgesics can be divided into three categories: peripheral acting non-opioids, central acting opioids and blockades. Peripheral acting drugs, such as NSAIDs and salicylic inhibit pain-producing enzymes and prostaglandins. Also paracetamol has an enzyme inhibiting effect but the mechanism is not fully known though a central acting effect seems to reduce pain as well as fever. Opioids such as codeine and morphine act centrally by binding to opioid receptors in the spinal cord and brain. Side effects such as nausea and dizziness are common when centrally acting drugs are used due to the more extensive impact on the central nervous system beyond the effect on the opioid receptors. Blockades inhibit the impulses of pain at different levels in the pathways from the nociceptors by application of local analgesia around the ascending nerves. The blockades can be applied close to the nerve endings in the sore area or in dorsal root ganglion but without causing central nervous side effects.

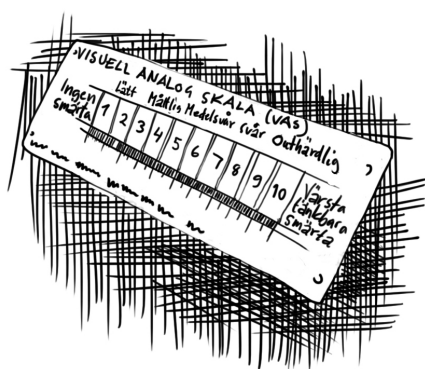
### 1.5.3 Pain assessment methods

Pain is an experience springing from physiological processes with sensations referred to a specific or indefinite part of the body (Merskey 1994). Since there are many individual perceptions and experiences of pain, there are also many definitions to find out a veracious description of pain (Merskey & Bogduk 1994, Mc Caffery 1989, Katz&Melzak 1999), all with the understanding that pain is an individual and subjective experience. The clinical

overview of the individual's pain experience needs methods and tools to complete the understanding of individual pain.

To assess and understand the pain experience, pain assessment methods have been developed from the middle of the 20<sup>th</sup> century. Depending on what kind of pain is assessed, different kinds of scales are used. To assess long-term pain more comprehensive tools are recommended with the possibility to describe details such as location, frequency and type of pain (White 2004). The Mc Gill Pain Questionnaire (Melzack & Torgerson 1971) is one of the best-known assessment tools for pain. It is admittedly time consuming but captures a multidimensional view of pain.

There is a tool to assess how acute pain is, which is rapid and easy to use, with feasible, precise and with the required interpretable properties. The acute pain experience can either be explained by words such as “none”, “slight”, “mild”, “moderate” and “severe” (Keele 1948), or by figures from zero up to 4, 10 or 100 (Downie 1978).



The most widely used assessment tool for measurement of acute pain is the Visual Analogue Scale, VAS (Figure 6) developed by Clarke & Spear in 1964 (Coll 2004).

The VAS scale consists of a line on one side, where the patient indicates the pain intensity ranging from “no pain” to “unbearable pain”. On the opposite side the line corresponds to a 100 mm scale (0 to 10).

Figure 6. Visual Analogue Scale used for pain measurement.

#### 1.5.4 Pain and pain treatment during medical abortion

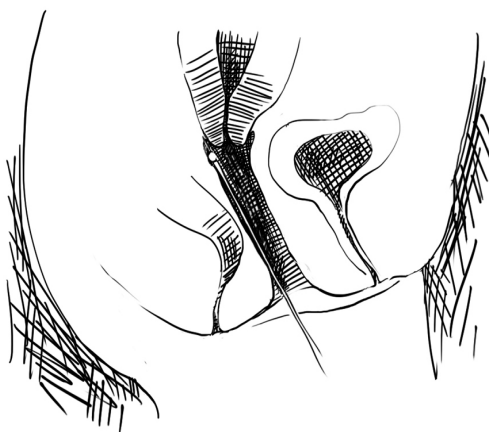
It is well known that the most common side effect of misoprostol is pain due to increased uterine tonus and contractions (Schaff et al 2001, Akin 2009, Hamoda et al 2005). Younger women, lower parity and higher gestational length are characteristics seen as predictors for higher analgesic use (Penney 2006). In mid- and second-trimester abortion the requirement of analgesics also increases with the numbers of misoprostol doses (Hamoda et al 2004). Pain intensity measured by VAS during second trimester-abortion often reaches levels for severe pain, > VAS 7, mainly associated with the fetal expulsion (Mentula et al 2014).

There are wide varieties of pain treatment methods for medical abortion associated pain, and the regimens are different which may impede comparison to find an optimal abortion pain treatment (Jackson & Kapp 2011).

Oral medications with paracetamol are frequently used together with codeine or ibuprophen in first-trimester abortion (Fiala et al 2014). In second-trimester abortion are intravenous

opioids, sometimes as patient controlled analgesia (PCA) or fentanyl, orally given diclofenac as well as paracervical block, PCB, with bupivacaine are used. Recently the experience of using epidural anesthesia, EDA, for pain relief in second-trimester abortion has been published (Maggiore et al 2015). EDA seems to offer the most effective pain relief for second-trimester abortion.

Paracervical blockade, (PCB) is a method that has been used for pain treatment in obstetric and gynaecologic procedures since the 1920s.



PCB is performed by injection with local anaesthetics around the cervix to inhibit pain impulses from the nerve fibers that innervate the cervix and lower parts of the uterus. Different techniques are described with 2 to 4 injection sites of local anaesthetics. Usually a 2 to 4 millimetre deep injection into the mucosa is applied by using a Kobac's needle or an ordinary injection needle (Tangsiriwatthana et al 2013).

Figure 7. Application of PCB.

There are a few studies available on the effect of paracervical blockade, PCB. However, these studies are mainly from surgical abortions (Kan et al 2004) or other gynecological or obstetrical surgical procedures (Tangsiriwatthana et al 2013).

Pain is a multidimensional experience (Fabbro & Crescentini 2014) and in the abortion situation emotions and cognitive aspects as well as the physical pain are involved in the pain experience. The origin of the pain is multifaceted and includes physical pain, anxiety, and nausea. In most cases only the physical pain is targeted. However the most dramatic influence of pain has been shown to be the site of the abortion treatment, thus the experience received from the caring staff and “verbocain” (tender loving care) are central components in successfully reducing abortion associated pain (Westhoff et al 2000).

### 1.5.5 Placebo effect

Placebo is a treatment given with, from the researcher's point of view, no specific therapy or medical effect on the studied procedure or condition. In research for evaluating pain, sodium chloride is often used as placebo and compared with an active substance, in the belief that placebo is inefficacious. However, there are studies showing that placebo has a good patient outcome, although the explaining mechanisms are not fully identified. Findings that brain regions interact with cognitive and affective processes in a nonconscious way in pain perception may bring us closer to solving the mystery of the placebo effect (Craggs et al

2007, Jensen et al 2012). The patient's expectations and attitudes toward the provider and the treatment can influence the placebo response as well as the caregiver's positive attitude toward the patient and the treatment (Turner et al 1994).

## **1.6 ABORTION CARE**

### **1.6.1 The caring encounter**

Women undergoing abortion are in a vulnerable position and are dependent on professional care with empathy and a non-judgmental attitude (Slade et al 2001). It is important to understand the woman's feelings prior the abortion and strengthen a sense of security and confidence in the woman, by creating a professional caring relationship. The situation around second-trimester abortion, with mixed emotions, thoughts and experiences can be seen as a caring encounter built on interactions between the woman and the caregiver, and also in many cases with a relative, friend or partner involved.

Patients are in many ways at a disadvantage when they are treated for illness or are in conditions that require professional care. A caring encounter facilitates the patient's ability to understand and accept her situation (Holopainen 2014). This encounter is a complex phenomenon, with ingredients such as fellowship and warmth, particularly important in significant life-events (Gustafsson et al 2013). It is the patient's experience that determines if the caring encounter is successful or not. Relation and encounter are two important factors in the caring situation, attributable to a nursing interactionmodel (Sarvimäki & Stenbock-Hult 1991). Interaction models describe a human as a social being. She is part of the culture and the society in which she lives and orients on the basis of the norms and values that exist. She interacts with other people and is influenced by interpersonal relationships and how individuals perceive each other and their roles in different situations (Fawcett 1992).

### **1.6.2 Professional competence**

Though abortion is a common procedure worldwide in health care settings - and even outside where abortion is illegal, nurses have professional responsibilities together with clinicians, in providing care for women requesting an abortion. Counseling and information about abortion and contraceptive methods as well as caring for women undergoing the abortion are essential tasks that require professional knowledge and competence. Nurses' engaged involvement in abortion care can optimize the individual woman's experience when the care is free of bias and judgment. However, sexual and reproductive health care is not mandatory in most nurse education, and there is a great demand for clinical guidelines (Simmonds & Likis 2011). A WHO-document highlights the importance of knowledge and skills that health personnel may need to provide safe sexual and reproductive health care worldwide (WHO 2011).

The International Confederation of Midwives, ICM, have recently updated core competencies for basic midwifery practice and added a domain related to abortion-related care. The midwife's role in abortion care has an important role in reducing complications from unsafe abortions (Fullerton et al 2011) that corresponds to 13 % of maternal deaths worldwide (Sedgh 2012).

In Sweden “sexual and reproductive health care” is the core-subject in the midwifery education program. Giving support to women who request an abortion and having good knowledge about abortion care was stated in the Swedish regularity code for midwives during the 1980s to 2010s. A recently performed trial in Sweden, showed that early medical abortion among healthy women, handled by midwives where ultrasound examination is included in care, is as effective and safe as early abortions handled by clinicians. Acceptability was high and women who had met a midwife preferred to have the same care provision if needed in the future (Kopp-Kallner et al 2014).

### **1.6.3 Preconditions for providing good care**

Knowledge about abortion methods, pain and pain treatment is essential to provide good care of women requesting an abortion (Murphy 2000). Beside basic training as nurse- or midwife, more specific training is needed focusing on the patient's needs and comfort to provide a high quality healthcare and a good patient experience (Robert et al 2014).

Even if nurses/midwives working in abortion care agree on women's rights to abortion, they can experience distress when involved in abortions at later gestational length (Lindström et al 2007). Discussions with colleagues about values and experiences according to second-trimester abortion can reduce fear and anxiety among midwives/nurses and have a positive impact on long-term experiences among women undergoing abortion as well as the caregivers (Huntington 2002).

## **1.7 ETHICS**

### **1.7.1 Ethical codes**

There are international and national ethical codes agreed on in the caring professions (ICN 2012, ICM 2014, SBF 1999). A wide conclusion of the codes is that the professional care has to be performed with respect to human rights, cultural rights, the right to life, to dignity and that women, men and children have to be treated with respect.

### **1.7.2 Ethical theories and principles**

Referring to ethical normative theories, utilitarianism seems to be the theory which best supports abortion according to the side effects of the abortion. Utilitarianism views abortion in a pragmatic way, saying that the woman's choice determines the most positive



consequences, and allows abortion for that reason. Obligation- and justification based theories are more focused on the fetus as a person and are restrictive to induced abortion with arguments that abortion is equal to murder (Tännsjö 2000).

The principles of biomedical ethics are described in terms of respect for autonomy, nonmaleficence, beneficence and justice. In the relationship between the caregiver and the patient, obligations of veracity, privacy, confidentiality and fidelity play an important role (Beauchamp & Childress 1994), and are well transferable to the encounter with women undergoing second-trimester abortion. An encounter with respect, empathy and professional support and advice from the care giver is crucial to create an atmosphere of trust and safety.

## **2 ETHICAL ASPECTS**

Second-trimester abortion is a “hot topic”, presenting the people involved with sensitive questions about their thoughts and feelings, which may evoke emotional discomfort. Voluntary participation and informed consent is therefore of great importance for studies performed on this topic. Recruitment for all studies in this thesis was conducted on a voluntary basis and each participant has signed an informed consent before taking part in any of the studies.

Data collection for study I was conducted at another hospital than the hospital where the interviewer was employed. The interviews with nurses/midwives, were performed in a gynecological ward setting where the respondents were unknown to the interviewer, with the intention of allowing the respondents to feel free to express their perceptions and experiences from second-trimester abortion care.

Women undergoing second-trimester abortion are in a vulnerable situation and questions about feelings, thoughts and the fetus can be perceived as provocations, or can awaken difficult emotions when forced to face a burdensome reality. Prior to mifepristone intake women received oral and written information about the questionnaire and interviews, and that participation in the study was voluntary and they could chose not to participate without having to give any reason for this. Women who had filled in the questionnaire could stop further participation with the interviews without giving any reason. This was the case among two women. The interviews were conducted with no other persons present other than the woman and the interviewer to allow a sense of privacy and to ensure that women were guaranteed confidentiality. Before discharge from the hospital, women were asked if they wanted to take part in a follow-up telephone interview. The telephone number and approximate date and time were determined together with the woman if she wanted to remain in the study.

Women who were invited to study IV received oral and written information about the study prior to start of misoprostol treatment. Most women who did not participate gave an explanation for this although this was not a requirement. One ethical question aroused,

mainly from staff with positive experiences from PCB, whether it was right to give PCB with placebo to women with severe pain. Their opinion was that even the procedure itself, to administer the PCB, can be a painful procedure.

The Regional Ethical Review Board at Karolinska Institutet approved the studies in this thesis, dnr: 2007/1277-31/2, 2010/410-31/1, 2011/859-32 and 2014/861-32. The trial for study IV was registered with ClinicalTrials.gov (Identifier: NCT01617564) and The EudraCT 159 (number 2010-020780-21).

### **3 AIMS OF THE THESIS**

The overall aim of the project was to identify strategies to improve the care of women undergoing second trimester induced abortion.

This was done through the following specific objectives;

#### **Study I**

To explore the experiences and perceptions of nurses/midwives who care for women undergoing second trimester abortion.

#### **Study II**

To study women's expectations and experiences of undergoing second trimester abortion.

#### **Study III**

To explore thoughts and feelings related to the fetus among women undergoing second-trimester abortion, and their perceptions of viewing or not viewing the fetus.

#### **Study IV**

To determine if paracervical blockade, PCB, administered before the onset of pain can reduce pain experienced during second-trimester abortion.

## 4 MATERIAL AND METHODS

### 4.1 STUDY DESIGN

The thesis has both a qualitative and a quantitative approach. To gain a deeper understanding and capture emotions and experiences, qualitative methods are mainly used in study I, II and III (Hatem & Rider 2004). Content analysis is used for analyzing the data, and in the quantitative parts descriptive statistics are used for describing background data.

Study IV is a double-blinded randomized controlled trial and comparison of the endpoints is carried out by using generalized estimating equation (GEE) with a binomial distribution and log link, presented with risk ratios (RR) and 95% confidence interval (CI).

**Table 1.** Overview of design and methods in study I – IV.

STUDY	DESIGN	DATA COLLECTION METHOD	PARTICIPANTS	DATA ANALYSIS
<b>I</b>	Qualitative	Semi-structured interview	Nurses/midwives with experience from second-trimester abortion care (n=21)	Content analysis
<b>II</b>	Cross-sectional	Questionnaire Semi-structured interview	Women undergoing induced second-trimester medical abortion  Questionnaire (n=31) Interview (n=23)	Descriptive statistics  Content analysis
<b>III</b>	Mixed method	Questionnaire Semi-structured interview  Telephone interview	Women undergoing induced second-trimester medical abortion (n=15)	Descriptive statistics  Content analysis
<b>IV</b>	RCT	Double-blinded randomized controlled trial	Women undergoing induced second-trimester medical abortion (n=113)	Generalized Estimating Equations (GEE) model  Mann-Whitney U test  (Package SPSS v.22 and SAS v 9.4)

## **4.2 PARTICIPANTS AND DATA COLLECTION**

The studies were performed at Stockholm South General Hospital and Karolinska University Hospital in Stockholm, Sweden. Data collection was done between April 2010 and April 2015.

### **Study I**

Participants in study I were nurses/midwives working in three gynecological wards where about 40 nurses and 10 midwives are employed. Taken together around 500 second-trimester abortions are performed annually in these wards. Information about the study was given at six work-place meetings. Attendants at the meetings were invited to participate and received information about the study together with an email-address to contact if they were interested in participating. All nurses/midwives who wanted to participate were included in the study. The participants were relatively newly trained nurses as well as nurses/midwives with many years experience from gynecological and second-trimester abortion care. Data collection was conducted between April 2010 and July 2012. The participants were interviewed in a secluded place in connection to their work shift and workplace. The interviews lasted from between 17 to 35 minutes. The interviews followed an interview guide and were recorded.

### **Study II**

Participants in study II were women, who terminated the pregnancy for socioeconomic or fetal reasons. Inclusion criteria were being 18 years old or more, gestational length 13 weeks or above, and mastering the Swedish language. Data-collection was conducted between June 2013 and January 2014, in a gynecological care unit where the annual number of second-trimester abortions is about 180. Verbal and written information was given to the women prior to the mifepristone intake at the polyclinic visit. Data collection was done by a questionnaire prior the abortion and an interview directly after the abortion. The questionnaire consisted of twelve questions with given alternative answers and one open-ended question. One part of the questionnaire was a list of 24 “emotions” from which the woman could choose and tick the feelings which she felt related to her own situation. The interviews took place in the patient’s room and followed an interview guide. The interviews were recorded and lasted from eight to 31 minutes.

### **Study III**

Participants in study III consisted of women participating in study II, who also did a follow-up telephone interview 6 to 10 months after the abortion. Data from the questionnaire prior to the abortion together with data from the interview after the abortion before discharge from the hospital and data from the telephone interview were analyzed in study III. Data collection by the telephone interviews was conducted between April and July 2014. The telephone interview followed a guide with seven questions. The answers were briefly written down during the interview, and were transcribed directly when the phone call ended.

### **Study IV**

Women included in study IV underwent second-trimester abortion for fetal or socioeconomic

indication. Inclusion criteria for enrolment were 18 years or older, gestational age from 13 weeks and being able to understand Swedish. Women with allergies to morphine or local anesthesia were excluded. Also women with alcohol or any other drug abuse, regular pain treatment or psychopharmaca were excluded. Data collection was conducted between May 2012 and April 2015 in the same gynecological care unit as the participants in study II and III. Verbal and written information about the study was given to the woman prior to administration of the first dose of misoprostol.

Women who consented to participate were randomly allocated to receive a PCB, with either 20 ml local anesthesia or 20 ml placebo one hour after the first dose of misoprostol. The PCB was given irrespective of whether the woman experienced pain or not.

The experience of pain was measured by visual analogue scale (VAS) at the time of administration of the first dose of misoprostol (baseline) and thereafter repeated every half hour during the abortion until fetal expulsion. A case report form was used to collect the women's demographic and obstetric characteristics as well as VAS-scores, time for PCB application, expulsion of the fetus and placenta, any complications or side effects. There was also a space given for additional comments. The nurse/midwife in charge was responsible for filling in the case record form.

### **4.3 CONTENT ANALYSIS**

Content analysis is a method used to analyze and structure data from verbal, written or visual communication. It can be used with quantitative approach to determine the frequency of a studied phenomenon or with qualitative approach to develop understanding of a studied phenomenon. Content analysis was originally used for interpreting and understanding political messages in the early 20<sup>th</sup> century, mainly with quantitative approach. Journalists, sociologists, psychologists and even businessmen use the method to understand and find out ways to reach and understand their respondents, clients or customers (Krippendorff 2004). During the latter half of the 1900s, the method was expanded to be used in scientific research, not least in nursing and with a qualitative approach. The aim with the method is to break down word texts in a structured way to explore, describe and interpret a studied phenomenon.

Terms for trustworthiness in qualitative research are credibility, dependability and transferability (versus validity, reliability and generalizability in quantitative research). Credibility, deals with how well categories mirror the original data and how close the interpretations are to the content of the studied phenomenon. Dependability deals with changes over time and widespread data, which may lead to contradictory findings. Transferability refers to whether the findings can be transferred to other contexts. By describing in as much detail as possible the context where the study is performed can the transferability can be deemed (Graneheim & Lundman 2004).

The content analysis performed in this thesis, is originated from texts from transcribed interviews. According to the aim of the study, meaning units were extracted from the texts and sorted into codes. The codes were merged in categories to find patterns of the explored phenomenon and finally themes emerged from the categories

#### **4.4 STATISTICAL ANALYSIS**

Descriptive statistics were used in study II and III to present and visualize background factors of the participants, and was not the main method in those studies.

Statistical analysis of the data in study IV was carried out using SPSS Version 22 and SAS Version 9.4. To analyze the primary outcome a Generalized Estimating Equation (GEE) model with a binomial distribution and log link, presented with risk ratios (RR) and 95% confidence interval (CI) was used (Greenland 2004). Categorical secondary endpoints were tested for distributional differences between groups in a similar manner. To compare induction-to-abortion interval and morphine consumption, neither variable normally distributed, the Hodges-Lehmann estimation of location shift and the corresponding 95% CI was presented and the differences tested with the Mann-Whitney U test. The level of significant differences was set to  $p < 0.05$ .

## **5 RESULTS**

### **Study I**

Seventeen nurses and four midwives, aged 25 to 59 years, were interviewed. Two themes were revealed from the interviews: “The professional self” and “The personal self”. The themes describe experiences and perceptions in terms of professional behavior and personal values. The theme “The professional self” describes how the nurses/midwives act towards the woman in the caring situation, situations which they find hard to handle and their opinion of how to develop their own competence. The theme “The personal self” describes the nurses/midwives dealing with emotions and conflicting thoughts as well as their opinion of developing inner safety and maturity.

Taking care of women undergoing second-trimester MToP were described as a task that requires professional knowledge, empathy and the ability to reflect on ethical attitudes and considerations. Difficult situations that arose during the process were easier to handle with increased knowledge and experience. Mentorship from experienced colleagues and structured opportunities for reflection on ethical issues enabled the nurses/midwives to develop security in their professional roles and also to feel confident in their personal life situation. The feeling of supporting women's rights bridged the difficulties nurses/midwives face in caring for women undergoing second-trimester MToP.

## **Study II**

Thirty-one women answered the questionnaire prior the abortion and 23 of them were interviewed after the abortion before discharge from the hospital. Indications for the abortion were either unintended pregnancy or fetal malformation. The age of the participants ranged from 18 to 41 years with pregnancies from 13 to 21 weeks gestational length.

The women expressed similar emotions prior the abortion, largely irrespective of the indication to the abortion but with some differences. Several participants expressed mixed feelings (both positive and negative). Women undergoing the abortion for the indication fetal malformation had chosen “pain”, “anger” and “powerlessness” more frequently than women with unintended pregnancy. “Relief” was expressed by half of the women with unintended pregnancy compared with none of the other women.

The interviews revealed five themes: “Not knowing what to expect”, “To suffer”, “To cope”, “To get support” and “To remember”. The themes mirror the participant’s experiences, thoughts and feelings related to the abortion.

The participants described physical and emotional pain. Physical pain with strong intensity was experienced by a majority of the women but some of them described the emotional pain as harder to go through. Taking the mifepristone-pill was experienced especially emotionally hard for many participants and caused fantasies about the fetus among some women. Some participants also expressed that philosophic and existential thoughts of life and death had appeared. Support from the partner, a relative or a friend was a great help for most of the participants and this together with professional support from the staff helped them to transform worries, to feelings of good coping ability.

Despite strong and conflicting emotions women did not regret their decision to have the abortion. Their rational thinking outweighed their emotional hard feelings of a painful necessity.

## **Study III**

Fifteen women comprised study III: 10 with unintended pregnancy and 5 with fetal malformation as the indication to the abortion. Prior to the abortion 9 of the 15 women did not want to, and 5 were unsure if they wanted to view the fetus. Nine women expressed thoughts about the fetus prior to the abortion. The thoughts were mainly about viewing the fetus or not, but also about if it was conscious about pain and about the sex of the fetus.

The interviews revealed two themes: “The physical” and “The emotional”, which mirror the women’s experiences, thoughts and feelings related to the fetus. The theme “The physical” describes thoughts and feelings related to the fetus’ developmental stage and size, the women’s expectations and experiences of the expulsion but also more practical thoughts such as preparations for an eventual funeral or how they created memories of the fetus. The theme “The emotional” describes women’s curiosity and fantasies about the fetus’ personality/appearance and how they experienced a relationship to the fetus during the



pregnancy. This theme also describes the participant's worries about causing suffering and pain to the fetus during the abortion and different ways of grieving after the abortion.

The four women with unintended pregnancy who had unintentionally or intentionally viewed the fetus did not experience any negative feeling at the telephone interview. The women who had chosen to not view believed it was the best choice to avoid unpleasant feelings afterwards. Most women with unintended pregnancy said at the telephone interview that they no longer had any thoughts about the fetus, while women who had the abortion for fetal malformation still expressed feelings of sadness over a lost child.

## **Study IV**

In study IV 113 women were included. After exclusion of women who did not meet the inclusion criteria or who discontinued were 102 women remained in the study. Of them 52 women were randomized to a PCB with bupivacaine, and 50 women were randomized to a PCB with sodium chloride, administered one hour after the first dose of misoprostol. There were no differences in demographic characteristics between the two study groups except marital status and indication to the abortion. The mean age of the participants was 28.7 (SD  $\pm 7.3$ ) years, 46 (49 %) were primigravida, 31 (31 %) had a previous vaginal delivery and 36 (35 %) had had an induced or spontaneous abortion.

The highest pain intensity was reported as severe (VAS 7-10) among 65 - 75 % of the participants. The main outcome variable, highest pain intensity did not show any differences between the two groups at a cut-off of VAS  $\geq 7$ . Most women did not experience pain at the misoprostol start, 19 women scored VAS  $> 0$ , from 1 to 4 with mean 1.8 and median 2 ( $p=1.000$ ). At the time for PCB 61 women scored VAS  $> 0$ , from 1 to 10 with mean 2.0 and median 1 ( $p=0.771$ ). A subgroup analysis of primipara did not show any difference in highest pain intensity VAS  $\geq 7$  ( $p=0.194$ ).

No statistically significant differences were observed between the two groups with regard to the highest and lowest pain intensity and morphine consumption. There was no difference in efficacy between the groups, either in induction-to abortion interval and time to placental expulsion in the rates of surgical intervention or the need for additional treatment. Most common side effects were nausea and vomiting in connection to morphine injection, and were reported by 28 women, with no differences between the two groups.

# **6 DISCUSSION**

## **6.1 MAIN FINDINGS**

The main finding of this thesis is that induced second-trimester medical abortion is a procedure with mixed emotions and experiences among both the women and caregivers.

Despite emotional difficult situations that arise during the abortion nurses/midwives express that positive feelings dominate, depending on a feeling of doing something good in support of women's rights. Empathy from caregivers, support and rational thinking outweigh women's emotionally difficult feelings connected to second-trimester abortion, and most women do not regret their decision to undergo an abortion.

Women undergoing second-trimester abortion do have feelings and thoughts about the fetus, irrespective of the indication for the abortion. Asking women prior to the abortion about their feelings related to the fetus does not cause negative reactions and may help women to be more prepared for the expulsion and to decide whether to view the fetus or not.

Pain is common during second-trimester medical abortion, and around two thirds of the women experience severe pain (VAS >7) at some point during the abortion. Prophylactic treatment with PCB does not reduce the pain intensity during second-trimester medical abortion.

## **6.2 REFLECTIONS ON THE FINDINGS**

### **6.2.1 Challenges in caring**

Caring for women undergoing second-trimester abortion is a challenging task, which requires empathy and professional knowledge (Nicholson et al 2010) in the encounter with women undergoing the abortion. In study I the nurses/midwives showed that they were conscious about the impact of their role in the abortion situation when information was given to the woman. Listening to the women's needs and individualized care were seen as important parts of care giving. However the endeavor to suffice for many different needs of the women was frustrating for some nurses, especially those who were relatively newly graduated. This frustration together with perceptions of medically or emotionally difficult situations that they encountered made the nurses/midwives express a need for collegial support and training. Some nurses expressed that it was difficult to meet women's thoughts and answer their questions about fetal developmental status, and fetal perceptions of pain and death. To reach clinical practice with benefits for both the patient and the caregiver, work-based learning can be used: a structured approach with focus on learning about the context, procedure or role with partnership and support from educational programs (Clarke o Copeland 2003). Scheduled specific work-based learning in second-trimester abortion care may include training in acute situations and education on fetal development as well as issues related to ethical, cultural and religious considerations and partner/relative support. The refugees' situation in Europe, with many families and women in fertile age moving to Sweden, create increasing demands on health care personnel and it is important to increase the knowledge and understanding of how women with different backgrounds should be optimally cared for.

Some nurses/midwives expressed that handling the fetus was difficult and emotionally charged. They explained how they handled it with dignity and tried to make the moment for

the woman/couple to say farewell and get a positive memory, in cases of fetal indication. Different opinions existed about if and how they should talk about the fetus with women who went through the abortion for socioeconomic reasons, and several nurses/midwives hesitated to inform women about the possibility to view the fetus or to ask them about their wishes. An interesting reflection is that the nurses who were relatively newly trained more often gave detailed descriptions more often of cases with a fetus that had shown life signs compared with nurses/midwives with longer experience. This reflection leads to thoughts about if and how health staff develop coping strategies to manage difficult situations or if worries and thoughts make difficult situations greater than they really are.

Ethical discussions were called for among the nurses/midwives, which is in accordance with a Norwegian study. In that study nurses saw reflection on ethical values as a benefit to the quality of nursing (Berntzen et al 2013). A pondering behavior and an intra- or interdisciplinary discourse in difficult ethical situations has a positive impact to the relation between the caregiver and the patient (Lützén & Kvist 2012). The findings in study I, that nurses/midwives who found it ethically difficult to work in second-trimester abortion care, still viewed their work valuable in a women's rights perspective, may arise from individual and collegial reflections on ethical values.

To be responsive and attentive to the woman's needs is important but also to be brave to ask questions about issues seen as "forbidden" - these are the balancing challenges in second-trimester abortion care.

### **6.2.2 Women's needs**

Women undergoing abortion are in a vulnerable situation. Even if abortion is more accepted in Sweden today than back in history or in many other countries, judging attitudes to women undergoing abortion still remain in society. The fact that gestational length for viability in premature deliveries and the upper border for induced abortion is close, is a ground for anti-abortion movements who often relate to the debate by appealing to emotions about the fetus. This may cause women undergoing second-trimester abortion to feel even more vulnerable.

Although the media and general attitude is more open compared with only a few years ago, women undergoing second trimester abortion usually do not talk openly about their experiences to others apart from close friends or family (France et al 2013). However there can be a need for women to share their thoughts, feelings and experiences in connection to an induced abortion, and for many Internet and social media have become a way to express inner feelings. In this thesis these needs become obvious in the preparation for study II. The intention was to use a questionnaire both prior and after the abortion. A "think-a-loud-test" was used to validate the questionnaires. During the tests the women expressed many thoughts around the abortion and some also expressed relief that questions about the fetus were asked. They explained that they had thought a lot about the fetus but no one had talked with them about it, and they did not dare to ask. The findings from the pre-test together with the findings

from the interviews, when women expressed appreciation for having the possibility to talk to others about their expectations and experiences, show how important the dialogue with the caregiver is. Factual information together with empathy and emotional support may decrease women's worries for undergoing second-trimester abortion.

Some of the women in study II and III expressed that they found the questions about the fetus strange but had an understanding that other women could have thoughts and wishes different from their own. They said that it was better to be asked such questions to detect all kinds of needs than not being asked and miss individual wishes. Neither did viewing the fetus after the abortion seem to cause long-lasting negative emotions to the women whether they viewed the fetus willingly or unwillingly.

The possibility to choose viewing or not viewing has been shown in previous studies in women undergoing abortion for fetal reasons, to be a crucial point (Sloan et al 2008). According to the findings in study I and III, it seems to be a greater problem among staff than among women undergoing the abortion about how to behave in talking about the fetus. If the women are not asked about their wishes, they do not get the chance to choose. Women undergoing second-trimester abortion for other reasons than fetal indication should also have this possibility to choose.

### **6.2.3 To meet the pain**

The pain was mentioned both among the nurses/midwives and the women as a phenomenon that was difficult to be prepared for, hard to experience, hard to perceive and difficult to find ways to treat. A majority of the women experienced intensive and severe physical pain at some part of the abortion and this is in accordance with other studies (Wiebe 2001, Mentula et al 2014) and is not acceptable. Several women also mentioned that they experienced emotional and mental pain in connection to the abortion. The nurses/midwives expressed powerlessness when they talked about the abortion pain which is in accordance with previous findings which indicate that nurses suffer from moral distress when pain treatment is unsuccessful (Bernhofer & Sorell 2014). From the women's point of view severe pain experiences may influence the memory in the future and in the worst case scenario be a disposition for developing chronic pain (Meyer et al 2015). With this knowledge it is important to improve methods for pain treatment in second-trimester abortion care as well in abortion care in general.

The emotional pain is more complicated and is not always possible to relieve. It is also well known that physical pain increases with fear and anxiety (Colloca & Benedetti 2007). This may be an explanation as to why it is difficult to find methods for effective pain reduction during second-trimester abortion. The woman's pain experience is strengthened by her negative emotional experiences, which make it even more clear how important the caregiver's attitude and response are in the encounter with the woman. A reliable and friendly atmosphere is crucial for successful second-trimester abortion pain treatment and care.

#### **6.2.4 Medical treatment of the pain**

Peripherally acting drugs given orally together with NSAIDs and orally or intravenously given opioids are frequently used as pain treatment for abortion related pain (Jackson & Kapp 2011, Fiala et al 2014). EDA gives effective pain relief for labor and second-trimester abortion pain (Irestedt et al 1998, Maggiore et al 2015), but requires high technical support and access to anesthesiologists (Dubar et al 2010), while striving for more readily available methods to offer women optimal pain relief in even simpler clinics has to be continued. PCB is a simple technique that can be administered by clinicians or midwives and has good analgesia on labor pain (Ranta et al 1995), this is why it was tempting to further develop and study this method for second-trimester abortion related pain relief.

The findings in study IV do not support the use of PCB before the onset of pain as preventive pain relief. Severe pain was experienced by 65 % to 75 % of the participants in study IV, which is an unacceptable high prevalence. The findings in study IV were a bit surprising according to the great belief in the effectiveness of PCB among health care staff working with abortion care. In obstetrics PCB is a well-known pain treatment method but has been ousted by epidural analgesia with less affect and complications for the fetus than PCB. Previous studies have also shown that blockades have more effective pain reduction than other methods for labor pain (Ranta et al 1994) and that PCB gives pain reduction for surgical interventions (Tangsiriwatthana et al). Although the neurophysiological mechanisms might be rather similar for labor and abortion pain, it might be confusing that the findings in study IV did not show any significant differences between the two study groups.

#### **6.2.5 Ethics and conscientious objection**

Ethical considerations are almost invariably mentioned when induced abortion is discussed. Caregivers as well as women, undergoing abortion, may have ethical thoughts on second-trimester abortion, which have to be taken into account. Even if most women do not regret the decision to have an abortion they may have anti-choice views in their minds (Wiebe et al 2005) and a non-judgmental attitude from the caregivers is crucial for their clients' emotional recovery after the abortion.

A challenging ethical aspect of second-trimester abortion is that the fetus is often compared with a human being, which usually awakens emotional thoughts and feelings among those involved. Depending on cultural, religious or social background the standpoint differs and influences, consciously or unconsciously, the individual person. Ethical standpoints to abortion can be "black or white" if they are originated from and following a specific normative ethical theory. It would be easy to refer to the theory and act in its direction but life is more complicated than so. However, by going deeper into ethical theories and making their own ethical standpoint for abortion clearer, caregivers may be more prepared to meet anti-abortion voices and to support women's rights. Ethical discussions may be of great importance for health care personnel to be able to offer safe and non-judgmental abortion care to women requesting abortion even in later gestational lengths. Identifying ethical

problems and highlighting them during group discussions at the workplace, may reduce individual moral conflicts and ease negative stressful reactions (Lützén & Kvist 2012).

To plead conscientious objection and refuse involvement in abortion care according to religious or ethical beliefs, is to actively impair women's access to safe sexual and reproductive health care (Heino et al 2013). One must keep in mind that being a clinician, nurse or midwife is not a human right, but women have the right to safe abortion care services - even in second-trimester (Erdman et al 2013).

## **6.3 METHODOLOGICAL CONSIDERATIONS**

### **6.3.1 Strengths**

The studies were conducted in gynecological settings with well-established routines of second-trimester abortion care, to make sure that the data collection mirrored the context of Swedish second-trimester abortion care. The experience of pain was a leading part in the first three mainly qualitative studies and a RCT to explore a new approach to pain treatment was therefore an obvious choice for the last study.

The first three studies focused on expectations, emotions, thoughts, experiences and perceptions why qualitative methods were chosen to capture the wide range of information from the participants (Price 2002). Second-trimester abortion care was well known to the interviewer, and this pre-understanding strengthened the possibilities to generate important information about experiences and perceptions among the respondents. In study I this pre-understanding seemed to facilitate the participants to talk about their perceptions and experiences as if they had a discussion with a colleague. In some cases it was surprising that the nurse/midwife expressed controversial thoughts or feelings, i.e. "abortion as a contraceptive method" or "waste of lives". This outspokenness was valuable to capture their attitudes and come close to their personal opinions.

In study II and III a questionnaire was used, which was inspired from a previous abortion study (Kero et al 2001). The original study focused on the decision process and the abortion in general while our studies had a more distinct focus on the second-trimester abortion procedure and the fetus. Already during the think-a-loud pretest this seemed to help women and opened up their minds to express thoughts and feelings that they had not dared to share with anyone else. The questionnaire was also a way to prepare the participants for the interviews after the abortion when they compared their expectations, thoughts and feelings prior the abortion to the experienced performance.

In this thesis the analysis of data from study III inspired by "framework analysis" (Ward et al 2013) was used partly to ensure that all data collected in different ways from the participants should be included. To be aware of the content of data collected for every individual participant a story was created on data from the three collection methods (questionnaire,

interview, telephone interview). These stories gave a deeper knowledge of each participant's experience and the analysis continued by more traditional content analysis mainly used for the interviews.

A strength of study IV was that pain was measured in a standardized way every 30 minutes from the initial dose of misoprostol until fetal expulsion. Using VAS to collect data for the main outcome can be seen as good choice to get a high validity. VAS is an instrument widely used for measurement of acute pain and also in research (Coll et al).

### **6.3.2 Limitations**

In this thesis the settings, participants and data collection are from a Swedish health care system and according to Swedish laws, and is therefore only transferable to other settings with similar sociocultural environments.

In study I it would have been interesting to know more about the individual background of the participants, for instance if and how their own obstetric and gynecological background could have affected their views on second-trimester abortion care.

In the initial phase of preparing study II and III we discussed using a personality scale to find out if any differences in mood, personality or mental health status could influence the women's thoughts and feelings. This idea was abandoned though. There are previous studies with findings that indicate this does not necessary impact on the total experience and coping (Kero et al 2004, Wallin-Lundell et al 2013). The studies in this thesis were mainly focused on the women and their perceptions and experiences of second-trimester abortion while other sexual and reproductive aspects such as contraceptive use and partner's involvement have been left to future studies.

The power calculation conducted for study IV was based on a previous pilot study on women's perception of pain during second-trimester abortion. The hypothesis was that the proportion of women with severe pain ( $VAS \geq 7$ ) who received PCBs with bupivacaine was significantly different from the proportion of women with severe pain who received PCBs with Sodium chloride. Unfortunately due to a misunderstanding, the study sample fell slightly short of the planned number of women available for analysis and is therefore underpowered for detecting the differences that underpinned the original power calculation, which may have influenced the results. However, assuming the observed estimates, statistical significance in bupivacaine's favor would not have been reached even though the required number of women had been included. Another limitation of study IV was the great loss of participants in the initial phase; nearly 60 % of the invited women did not want to participate.

There is often a discrepancy between an ideal study and a study that is possible to perform. The ideal comparison between the two groups would have been a comparison between two identical groups due to indication to the abortion, age, parity, educational background and marital status. However, the participants in study IV were of different ages, parity and educational background but with no differences between the two groups except the indication

to the abortion and marital status where neither showed any differences in the pain experiences.

Apart from the aspects of study design and performance, other aspects must be taken into consideration for their impact of the findings in study IV. The women's negative emotions prior and during the abortion may have played a greater role than presumed and influenced their pain experience. On the other hand, the extra time compared with the general routine, that the health staff spent among the women for filling in the protocol and regular pain assessments may have affected them in a positive way. They were aware of being surrounded by staff offering them professional care which caused a feeling of safety and relaxation with decreased pain intensity as a side effect independent of the pharmacological (non) effect.

## **7 CONCLUSION**

Undergoing second-trimester abortion is a vulnerable and emotionally difficult situation for many women irrespective of the indication for the abortion. They have to be treated with respect, professional knowledge and empathy by nurses/midwives with specific knowledge and training for this procedure. Structured time for education and ethical reflections for health care personnel in work-based training can increase the possibility to offer optimal care for women undergoing second-trimester abortion.

A caring encounter with informing guidance from the nurse/midwife and possibility for the women to express concerns and issues is crucial in second-trimester care. To actively ask women prior the abortion about their emotions, thoughts, feelings and even about the fetus seems to help them to be mentally prepared for what will happen during and after second-trimester abortion. Women should have the chance to choose if they want to view the fetus, irrespective of the indication of the abortion.

Second-trimester abortion related pain is a complex experience often with a high intensity of the physical pain. Prophylactic PCB does not show any reduction of maximal pain scores and the need for additional opiates during second-trimester medical abortion.

## **8 FUTURE STUDIES**

Future studies on pain management should strive to target not only physical pain but also anxiety and nausea. Improved pain management is urgently needed in abortion care and especially at more advanced gestations.

Focusing on the long-term effects of pain experienced during medical abortion would be interesting, exploring if there are any connections to labor experience. In further research the partner's experiences would also be interesting to study and their impact on the woman's experience.



## 9 SVENSK SAMMANFATTNING – SUMMARY IN SWEDISH

### Bakgrund

Abort har förekommit i alla samhällen och kulturer under många tusen år. Abort efter graviditetsvecka 13, så kallad II-trimester abort, utgör globalt sett 10-15% av totala antalet aborter men den exakta siffran är svår att veta på grund av stora variationer i abortlagstiftning mellan olika länder. I vissa länder är abort helt förbjudet, vilket i praktiken innebär att aborter ändå utförs men med osäkra metoder med risk för kvinnans liv. Den abortmetod som används i Sverige vid II-trimester abort är en medicinsk metod, säker och rekommenderad av WHO. Metoden innebär att två läkemedel används: en tablett mifepriston som 36-48 timmar senare följs av behandling med misoprostol. Misoprostol ges med upprepade doser och framkallar sammandragningar, som kan liknas vid ett missfall.

Sveriges nuvarande abortlag (SFS 1974:595) trädde i kraft 1975 och ger kvinnor rätt att själva besluta om abort upp till graviditetsvecka 18. Abort efter graviditetsvecka 18 kräver tillstånd från Socialstyrelsens Rättsliga Råd. Andelen II-trimester aborter är färre än 10 % av det totala antalet aborter och har varit på denna nivå sedan abortlagen infördes 1975. Anledningen till att kvinnor genomgår II-trimester abort kan vara skada, missbildning eller kromosomavvikelse hos fostret, medicinska eller socioekonomiska skäl.

Vid medicinsk II-trimester abort tar det i genomsnitt cirka 5-6 timmar från det att den första dosen misoprostol ges tills att fostret stöts ut. Sammandragningarna upplevs ofta som smärtsamma och kvinnan erbjuds profylaktisk såväl som kompletterande smärtlindring. Kvinnor som genomgår II-trimester abort i Sverige vårdas på sjukhus och det är huvudsakligen sjuksköterskor eller barnmorskor som ansvarar för omvårdnaden förutsatt att ingen komplikation inträffar.

Vid II-trimester abort är fostret utvecklat och möjligt att se, och hålla. Funktioner för att fostret ska kunna överleva utanför livmodern är inte fullt utvecklade före graviditetsvecka 22. Inte heller fostrets hjärna och nervsystem är fullt utvecklat, vilket gör att det inte kan förnimma till exempel smärta även om det kan visa reflektoriska reaktioner.

Tidigare forskning om tidig medicinsk abort eller om abort generellt sett, visar att kvinnor ofta upplever blandade känslor i samband med aborten. Förutom oro inför smärta och blödning under aborten kan kvinnor även bära känslomässiga och existentiella frågor inom sig. De flesta kvinnor ångrar dock inte sitt beslut att genomgå abort och att genomgå en abort ökar inte risken för mental ohälsa. Erfarenhet från tidigare aborter, missfall eller förlossningar kan påverka kvinnors förväntningar inför en abort men även kultur, religion och attityder från omgivningen kan påverka kvinnans upplevelse.

### Syfte och metod

Syftet med denna avhandling var att identifiera möjligheter att förbättra omvårdnaden av kvinnor som genomgår II-trimester abort genom att:

- Studera uppfattningar och erfarenheter hos sjuksköterskor/barnmorskor som vårdar kvinnor som genomgår II-trimester abort (Studie I).

- Studera kvinnors förväntningar och upplevelser av att genomgå II-trimester abort (Studie II).
- Studera tankar och känslor relaterat till fostret hos kvinnor som genomgår II-trimester abort samt deras uppfattning om att se eller inte se fostret efter aborten (Studie III).
- Att undersöka om profylaktisk paracervikal-blockad, PCB, kan minska smärtupplevelsen under II-trimester abort (Studie IV).

De tre första studierna har kvalitativ ansats där intervju, enkät och telefonintervju har använts för att samla in data och innehållsanalys har använts för analys. Den fjärde studien är en randomiserad kontrollerad studie, av effekten av ett läkemedel (bupivacain) i jämförelse med placebo (koksalt) där statistiska analyser har gjorts för att få fram resultaten.

## Resultat

I studie I deltog 21 sjuksköterskor/barnmorskor och två teman framträdde ur intervjuerna. Temat "Det professionella jaget" beskriver hur deltagarna agerar i omvårdnadssituationen, hur de hanterar det som är svårt och hur de utvecklar sin kompetens. Temat "Det personliga jaget" beskriver hur deltagarna hanterar känslor och tankar utifrån sina värderingar och hur de ser på sin egen utveckling och mognad.

I studie II var det 31 kvinnor som besvarade en enkät om sina känslor och tankar innan aborten. Efter aborten intervjuades 23 av kvinnorna om hur de hade upplevt aborten. Kvinnorna hade både positiva och negativa känslor innan aborten och de uttryckte liknande känslor oberoende av indikation till aborten. Ur intervjuerna framkom fem teman som speglar kvinnornas upplevelser, tankar och känslor relaterat till aborten: "Att inte veta", "Att lida", "Att klara av", "Att få stöd" samt "Att minnas".

I studie III var det 15 av de kvinnor som deltagit i studie II som telefonintervjuades 6-10 månader efter aborten. Flera kvinnor hade haft tankar om fostret innan aborten medan de flesta inte ville eller var osäkra på om de ville se fostret efter aborten. Två teman framkom ur intervjuerna: "Det fysiska" som beskriver kvinnornas tankar och känslor om fostrets storlek och utveckling samt eventuella praktiska förberedelser för hur de skapar minnen. "Det känslomässiga" beskriver kvinnornas fantasier om fostrets utseende och personlighet samt deras oro för att orsaka lidande hos fostret. De kvinnor som hade sett fostret efter aborten sa vid telefonintervjun att inte hade upplevt det som negativt. De flesta kvinnor som hade genomgått aborten på grund av socioekonomiska skäl hade inte längre några tankar om fostret medan de andra fortfarande uttryckte känslor av sorg och saknad av ett förlorat barn.

I studie IV deltog 113 kvinnor. Kvinnorna fick paracervikalblockad, PCB, med antingen lokalbedövningsmedel eller med koksalt en timme efter att den första dosen livmodersammandragande läkemedel hade getts. Om kvinnorna behövde kompletterande smärtlindring fick de morfin direkt i blodet (intravenöst). Kvinnornas smärta mättes med hjälp av visuell analog skala, VAS, varje halvtimme tills fostret stöttes ut. De flesta (65-75%) upplevde svår intensiv smärta någon gång under aborten. Ingen statistisk skillnad sågs mellan de två grupperna i avseende på smärtupplevelse, mängden kompletterande morfin eller aborttidens längd.

### **Slutsats och kliniska implikationer**

Att genomgå II-trimester abort kan vara en känslomässigt svår upplevelse för kvinnor oavsett indikation till aborten. De bör vårdas med respekt, professionellt kunnande och empati av sjuksköterskor/barnmorskor med specifikt kunnande och utbildning. Schemalagd tid på arbetsplatsen för utbildning och etisk reflektion ökar möjligheten för att ge god omvårdnad till kvinnor som genomgår II-trimester abort.

I mötet mellan kvinnan och sjuksköterskan/barnmorskan är det viktigt att kvinnan får möjlighet att uttrycka sina tankar och känslor kring aborten. Att aktivt fråga kvinnor innan aborten om deras tankar och känslor – även om det som är relaterat till fostret, förefaller vara en hjälp för kvinnorna att bli förberedda inför aborten. De bör få möjlighet att välja om de vill se fostret eller inte efter aborten.

Smärta vid II-trimester abort är en komplex upplevelse ofta med en stark fysisk smärtintensitet. Att ge PCB i förebyggande syfte förefaller inte att minska smärtan under aborten.



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